Diseases associated with protozoa
TOXOPLASMOSIS

The Organism

- Toxoplasma gondii

1. Tachyzoites - the rapidly multiplying form of the parasite present during the acute stage of infection in the intermediate host
2. Bradyzoites - present in the tissue cysts
3. Oocysts (containing sporozoites) - present only in cat feces

Epidemiology

source of infection for sheep, cattle and horses

- oocyst in feces of the cat

Risk factors

- Oocysts are extremely resistant and survive in the environment for 1 year.
- Fifty grams of feces can contain 10 million oocysts
- infection can be established by fewer than 40 oocysts

Clinical Signs

Abortion and fetal mortality occur in sheep that suffer a primary infection during pregnancy

- clinical syndrome recognized is abortion and neonatal mortality in sheep
- The other, less common, syndromes are as follows

Cattle

- fever, dyspnea, and nervous signs, including ataxia and hyper excitability

Sheep

- fever, dyspnea, generalized tremor, abortions, and stillbirths can occur

Goats

- abortions and stillbirths. Systemic disease, with a high case fatality rate, can occur, especially in young goats.

Post Mortem Lesions

- Multiple, proliferative, and necrotic granulomata
- lesions occur in the nervous system, myocardium, and lungs
- pneumonitis, hydrothorax, ascites, lymphadenitis, intestinal ulceration, and necrotic foci in the liver, spleen, and kidneys.

Abortion

- focal necrotic lesions in brain, liver, kidney, and lungs; pathological lesions are much more common and severe in the placenta.

Clinical Diagnosis

- Case history
- Clinical sign
- P.M sign

Differential Diagnosis

- Brucellosis
- Trichomonosis
- Neosporosis
- Vibriosis
- Leptospirosis
- Listeriosis

Laboratory Diagnosis

histological examination

- granulomatous, necrotic lesions can be found in the viscera and in the brain
- Toxoplasma can be found in the cells of most organs, particularly the lungs and brain
- The organism is not easily demonstrated in aborted sheep fetuses or in their placentas.

Serological tests

- Sabin-Feldman dye test
- indirect hemagglutination assay
- indirect fluorescent antibody test (IFAT)
- modified agglutination test (MAT)
- latex agglutination test (LAT)
- enzyme linked immuno assay (ELISA)
- immuno agglutination assay test (IAAT)

Treatment

- sulfamethazine and pyrimethamine
- administered over 3 days for three periods with an interval of 5 days between the start of each treatment period
- These drugs are effective against the proliferating parasites in the acute stage of the disease, but will usually not eradicate infection and have limited activity on the organisms in tissue cysts

Prevention and Control

- Cat control
- Serological testing
- **Prophylaxis**
  - Feeding monensin at a dose of 15 mg/head per day during the first 100 days of pregnancy
  - decoquinate fed at 2 mg/kg daily Decoquinate is more palatable and has less risk of toxicity.
- Vaccination